

STANDARDS AND PRACTICES FOR ENVIRONMENTALLY RESPONSIBLE MINING IN THE NUSHAGAK RIVER WATERSHED

**A PRELIMINARY STATEMENT OF
THE NUSHAGAK – MULCHATNA WATERSHED COUNCIL**

February 2011



This document outlines a preliminary set of standards and practices for responsible mining within the Nushagak River Watershed in Southwest Alaska. These standards have been developed by the Nushagak – Mulchatna Watershed Council. The Council adopted the standards and practices as an interim measure pending final approval after a review and comment period.

INTRODUCTION

The Nushagak-Mulchatna Watershed Council (Council) was formed in 1998. The Council is an association of tribes, local governments and landowners who have joined together to protect the quality of the waters of the Nushagak River Watershed. In 2005 the Council undertook a process to develop a land and water conservation plan focusing primarily on the protection of habitat for salmon and other resources important for the subsistence needs of watershed residents. The process was completed and the Council approved and published the *Nushagak River Watershed Traditional Use Area Conservation Plan* in November of 2007 (Conservation Plan). The Conservation Plan incorporates a baseline of traditional ecological information gathered from the communities and indigenous residents of the watershed.

The Conservation Plan identified potential threats to habitat within the watershed and outlined a series of strategic actions to address those threats. One of the potential threats identified was mining, in particular, the potential development of large scale open pit gold and copper mines in the watershed. To address the potential impacts that mining could have on the habitat in the watershed the Council determined that a key strategic action would be to undertake an assessment of the risks to salmon posed by the development of large scale gold and copper mining in the headwater streams of the watershed. Such a risk assessment was undertaken by The Nature Conservancy in 2008 and completed in 2010. The report entitled *An Assessment of Ecological Risk to Wild Salmon Systems from Large-scale Mining in the Nushagak and Kvichak Watersheds of the Bristol Bay Basin*, Ecology & Environment was published in October of 2010.

Upon completion of the risk assessment the next strategic action identified in the Conservation Plan is to address the risks identified in the assessment through the development of a framework for responsible mining in the watershed.

The Nushagak-Mulchatna Watershed Council adopts the following standards and practices as a preliminary framework for environmentally responsible mining to guide the mining industry in the exploration and development of mineral resources and guide state and federal agencies in the permitting and oversight of such activities within the Nushagak River watershed. These standards and practices are adapted from the *Ten Principles of Sustainable Development Framework adopted by the International Council on Mining and Minerals*, <http://www.icmm.com/our-work/sustainable-development-framework/10-principles>; and *A Framework for Responsible Mining: A Guide to Evolving Standards*, Marta Miranda, David Chambers, and Catherine Coumans, <http://www.csp2.org/reports/Framework%20for%20Responsible%20Mining.pdf>, (October 19, 2005). In addition some of the standards and practices are derived from the results and observations of research projects undertaken to fulfill the strategic actions outlined in The Conservation Plan, see e.g. *Fish Surveys in Headwater Streams of the Nushagak and Kvichak River Drainages, Bristol Bay, Alaska 2008 – 2010*, The Nature Conservancy, and to address the risks identified *An Assessment of Ecological Risk to Wild Salmon Systems from Large-scale Mining in the Nushagak and Kvichak Watersheds of the Bristol Bay Basin*, Ecology & Environment, (October, 2010).

These standards and practices have also been developed with an awareness of the scientific literature regarding the resilience and vulnerability of wild salmon and the growing understanding of the role freshwater habitat plays in the development of sustainable wild salmon populations, particularly in Southwest Alaska, see e.g. Schlindler, et, al. *Population Diversity and the Portfolio Effect in an Exploited Species*, Nature, pp 609 – 612 (June 3, 2010)

I. Standards and Practices for Free, Prior and Informed Consent

- A. Mining companies should adhere to the principles of Free, Prior and Informed Consent as those principles are articulated in the *United Nations Declaration on the Rights of Indigenous Peoples* (2007) to which the United States became a signatory in December of 2010 and the *Position Statement of the International Council on Mining and Metals* (ICMM – May 2008).

Free, Prior and Informed Consent is defined as follows:

- Free – people are able to freely make decisions without coercion, intimidation or manipulation;
- Prior – sufficient time is allocated for people to be involved in the decision-making process before key project decisions are made and impacts occur;
- Informed – people are fully informed about the project and its potential impacts and benefits, and the various perspectives regarding the project (both positive and negative);
- Consent – there are effective processes for affected indigenous peoples to approve or withhold their consent, consistent with their decision-making processes, and that their decisions are respected and upheld.

Commitment #3 of the Position Statement of the International Council on Mining and Metals provides:

Engagement will be based on honest and open provision of information, and in a form that is accessible to Indigenous Peoples. Engagement will begin at the earliest possible stage of potential mining activities, prior to substantive on-the-ground exploration. Engagement, wherever possible, will be undertaken through traditional authorities within communities and with respect for traditional decision-making structures and processes.

Most of the indigenous residents of the Nushagak River Watershed are represented by Federally recognized tribal governments. The indigenous residents of the watershed also have interests that are represented by village and regional corporations established under the Alaska Native Claims Settlement Act of 1971. The indigenous and non-indigenous residents of the watershed may also have interests represented by local governments organized under the laws of the State of Alaska. All of these organizations should be informed of mineral exploration and development activities within the watershed and engaged in the process of consent. References in this document to residents or communities of the watershed include these organizations.

Residents of the watershed should be afforded sufficient time to understand the information provided by a mining company. Sufficient time should be a measure of the time it took a mining company to generate the information for exploration or a proposed mine in relation to the time it can reasonably be expected for residents to seek and engage their own experts to independently evaluate, verify and express opinions on the adequacy and accuracy of information provided by a mining company, especially as that information relates to environmental baseline studies and the potential impact of exploration or proposed mining activity on the water quality and the habitat of the watershed.

Information should be provided in a format that takes advantage of modern technology. Paper reports or the equivalent alone are insufficient. Information should be released in a digital format (tabular databases, GIS files, metadata, etc.) that can be easily searched, analyzed and independently evaluated by independent experts particularly as that information relates to potentially impacted public resources such as air, water, fish, and wildlife.

II. Standards and Practices for Exploration Activities

- A. The details of any mineral exploration project and the potential impacts of that activity should be made available before exploration begins.

No permit for exploration should be issued without sufficient advance notice to the communities and residents of the watershed, a ninety day comment period and at least one public hearing in Dillingham and one public hearing in the community closest to the proposed exploratory activity.

- B. Exploration activities should only be permitted upon a finding by the Commissioner of the Alaska Department of Fish and Game (ADF&G) that no significant harm will result to anadromous streams within the area proposed for exploration.

For the purpose of such a finding by the Commissioner of ADF&G any stream reach within the area of exploration with less than a 10% gradient should be presumed to be an anadromous stream.

- C. During the exploration phase mining companies should conduct fish distribution surveys of all waterbodies not listed in the Alaska Anadromous Waters Catalog that could be affected by eventual mine development and associated activities. Until such time as more accurate tools are available for predicting the location of anadromous streams, mining companies should survey all stream reaches within the footprint of the potential mine and all stream reaches within one mile of any planned development.

Fish distribution surveys should comply with protocols developed by ADF&G and reports of surveys should be provided to ADF&G and nominations made to the Anadromous Waters Catalog for any waterbody in which anadromous fish were documented.

- D. During the exploration phase mining companies should not file water withdrawal applications with the Alaska Department of Natural Resources for water to be used in the development, operation and closure of a mine. Such applications should only be filed upon completion of the mine plan that will be submitted for permitting.

Priority for water use within all waters of the Nushagak River Watershed should be accorded to the fish that inhabit these waters. Mining companies should provide the Nushagak-Mulchanta Watershed Council with sufficient funds to file and perfect instream flow reservations under Alaska law to protect minimum flows required for fish for any waterbodies that may be affected by water withdrawals for mine development, operation and closure.

- E. Mining companies should provide adequate financial assurances to pay for prompt cleanup, reclamation and long term monitoring and maintenance that could result from exploration activities. Self-bonding or corporate guarantees should not be permitted.

III. Standards and Practices for Mine Development and Operation

- A. No mine should be permitted within the Nushagak River Watershed that destroys or impairs habitat that supports a life phase of a particular salmon species such that the sustained abundance or genetic diversity of that species may be significantly compromised.

The Commissioner of ADF&G should not issue a permit for the destruction, relocation or removal of an anadromous water body within the Nushagak River watershed without sufficient notice to the communities and residents of the watershed, a 120 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the waterbody proposed for destruction or removal. The Commissioner of ADF&G should not issue a permit for the destruction, relocation or removal of an anadromous water body without clear and convincing evidence that the destruction or removal will not result in a significant loss to the sustained abundance or genetic diversity of any salmon species.

- B. No mine should be permitted within the Nushagak River Watershed that will require water withdrawals that may exceed ecological flow needs for salmon and other fish.

The Commissioner of the Alaska Department of Natural Resources (ADNR) should not issue a permit for the withdrawal of water to support the development and operation of a mine from any

waterbody in the Nushagak River Watershed until an instream flow reservation as provided in Alaska Law for fish has been filed and perfected by ADF&G, the Nushagak-Mulchatna Watershed Council or a partner organization. The Commissioner of Natural Resources should not reduce an instream flow reservation for fish without clear and convincing evidence that the reduction of instream flow will not result in a significant loss to the sustained abundance or genetic diversity of any salmon species. The Commissioner of ADNR shall not reduce an instream flow reservation for fish without sufficient notice to the communities and residents of the watershed, a 120 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the waterbody affected.

- C. No mine should be permitted within the Nushagak River Watershed that will require mixing zones.
- D. No mine should be permitted within the Nushagak River Watershed without a rigorous plan to control dust emissions during construction and operation.
- E. No mine should be permitted within the Nushagak River Watershed that could result in acid mine drainage during operation or after closure unless the risk of such drainage can be eliminated by methods proven to be effective at mines of comparable size, scale and location.

The Nushagak River Watershed is one of the last great wild salmon watersheds on earth. Acid mine drainage is a risk associated with mines that has contributed to the loss of wild fish populations in other parts of the world. Mining companies should conduct adequate pre-mining sampling and analysis for acid-producing minerals, based on accepted practices and appropriately documented, site-specific professional judgment. Sampling and analysis should be conducted in accordance with the best available practices and techniques.

The Nushagak River watershed is not a place to experiment with untested methods for controlling acid mine drainage. The Nushagak River watershed is characterized by extensive wetlands, moderate precipitation, numerous small streams, interconnections between ground and surface water, a high water table, and over geological formations that are susceptible to ground water movement. A method shown to be effective for controlling acid mine drainage in a drier climate is not sufficient. Any method proposed for controlling acid mine drainage should be proven effective in a watershed with similar characteristics to the Nushagak River Watershed.

- F. No mine should be permitted within the Nushagak River Watershed that requires shallow-water submarine waste disposal.

The rivers and tributary streams of the watershed should not be used for the disposal of mine waste.

- G. No mine should be permitted within the Nushagak River Watershed that requires deep-water submarine waste disposal unless such waste disposal will be environmentally benign.

A permit for deep-water waste disposal within the Nushagak River Watershed should not be issued without sufficient notice to the communities and residents of the watershed, a 120 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the waterbody proposed for waste disposal. A permit for deep-water submarine waste disposal should be issued only upon a finding supported by clear and convincing evidence that the disposal will not diminish water quality to the extent that the sustained abundance or genetic diversity of any salmon species using that waterbody is put at significant risk.

- H. No mine should be permitted within the Nushagak River Watershed that requires the use of cyanide unless the mine operator agrees to abide by the Cyanide Management Code, and third-party certification is employed to ensure that operators implement safe cyanide management.
- I. Tailings impoundments and waste rock dumps should be constructed in a manner that minimizes the release of contaminants by installing liners if seepage could result in groundwater contamination. In addition, waste facilities should have adequate monitoring and seepage collection systems to detect and collect any contaminants released in the immediate vicinity.

- J. Mine dewatering should be minimized to prevent all undesirable impacts on ground and surface waters, including seeps and springs.
- K. Mining companies should prepare detailed plans for responding to low risk but high impact events.

Some incidents associated with mines, like slurry pipeline breaks or tailings dam failures, may be very unlikely, but if they occur the impacts are potentially large. Mining companies should be required to develop detailed contingency plans for such events as well as provide financial assurances for the payment of costs associated with response to the incident and rehabilitation of the environment damaged. Self-bonding and corporate guarantees should not be permitted. The plan should be periodically revised and updated in to incorporate improvements in response practices and technology, and to account for changes in operation that occur over the life of the mine. Revised plans should not be approved without sufficient notice to the communities and residents of the watershed, a 60 day comment period, and at least one public hearing in Dillingham and one public hearing in the community most likely to be the first to suffer impacts from an incident (e.g. community immediately downstream of a tailings dam break).

- L. If permit violations occur, mining companies should commit to rapidly implementing corrections in order to maintain clean surface and groundwater
- M. The environmental performance of mine in the watershed and the effectiveness of the regulatory agencies responsible for regulating mines should be addressed in an independent environmental audit. These audits should be conducted on a regular basis and the results should be made available to residents and communities of the watershed.
- N. The residents, communities and representative bodies of the Nushagak River Watershed should have the right to independent monitoring and oversight of the environmental performance of a mine. Mining companies should be expected to cover the reasonable costs of such oversight.

IV. Standards and Practices for Reclamation and Closure

- A. Mining companies should develop a reclamation and closure plan before operations begin that includes detailed cost estimates, plus ten percent.. Reclamation and closure plans should address post-closure monitoring and maintenance of all mine facilities, including surface and underground mine workings, tailings, and waste disposal facilities.

The plan should be periodically revised and updated in to incorporate improvements in reclamation practices and technology, and to account for changes in operation that occur over the life of the mine. The residents and communities of the Nushagak River Watershed should have the right to comment on the adequacy of the reclamation and closure plan. Reclamation and closure plans should not be approved without sufficient notice to the communities and residents of the watershed, a 120 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the mine.

- B. Mining companies should restore to the greatest extent possible all disturbed areas to pre-mine conditions.
- C. Mining companies should re-contour and stabilize disturbed areas. This should include the salvage, storage, and replacement of topsoil or other acceptable growth medium. Material from the mine site should be tested for contaminants before being used for contamination. Quantitative standards should be established for re-vegetation in the reclamation plan—and clear mitigation measures should be defined and implemented if these standards are not met.
- D. Where subsidence is considered likely, mining companies should backfill underground mine workings to prevent negative environmental impacts.

- E. Underground workings and pits should be backfilled to minimize the size of waste and tailings disposal facilities.
- F. Underground mine workings should be tested and regularly monitored for contamination.

Financial expense should not be a consideration as to whether restoration is possible. Rather the question to be resolved with respect to restoration is whether it is possible to engineer restoration to pre-mine conditions without causing more environmental damage.

V. Standards and Practices for Financial Guarantees

- A. Financial sureties should be reviewed and upgraded every two years by the ADNR and the results of the review should be publicly disclosed.
- B. The residents and communities of the Nushagak River Watershed should have the right to comment on the the adequacy of the financial surety, and completion of reclamation activities prior to release of the financial surety.
- C. Financial surety instruments should be independently guaranteed, reliable, and readily liquid. Sureties should be regularly evaluated by independent analysts using accepted accounting methods. Self-bonding or corporate guarantees should not be permitted for financial surety.
- D. Financial sureties should not be released until reclamation and closure are complete, all impacts have been mitigated, and cleanup has been shown to be effective for a sufficient period of time, but no less than ten years, after mine closure.

Sureties should not be released without sufficient notice to the communities and residents of the watershed, a 90 day comment period, and at least one public hearing in Dillingham and one public hearing in the community closest to the mine.

VI. Standards and Practices for Post-Closure and Post-Closure Monitoring.

- A. Mining companies should provide a source from which the cost of monitoring and maintenance of the closed mine can be paid. Self-bonding and corporate guarantees should not be permitted.
- B. No mine should be permitted within the Nushagak River Watershed that will require active management in perpetuity to avoid environmental contamination.

Mines in this watershed should not pose an eternal threat of environmental contamination. Such a threat is deemed to exist if active measures like water treatment, groundwater pumping or other means of mechanical, chemical or human intervention will be necessary in perpetuity to prevent toxic effluents from escaping beyond the boundary of the mine. Such measures are considered active management and are distinguished from more passive activities like monitoring, occasional inspection, and the incidental maintenance that would still be necessary for a closed and sealed mine.

Before any mine is permitted in the Nushagak River Watershed an independent qualified professional should certify that active management will not be required in perpetuity.

PASSED AND APPROVED as a preliminary statement by the Nushagak-Mulchatna Watershed Council on February 16, 2011.



Luki Akelkok, Chairman